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10/798,309	03/12/2004	Nobuhiro Ishizaka	00862.023514.	5783

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EXAMINER	
DICKERSON, CHAD S	

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,309	ISHIZAKA ET AL.	
	Examiner	Art Unit	
	CHAD DICKERSON	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 4-6 have been considered but are moot in view of the new ground(s) of rejection. The amendment to the claims has necessitated a new ground(s) of rejection. However, the references of Watanabe '289, Iwasaki '403 and Clark '856 are still being applied to the claims. The Examiner believes that the claim amendment is still disclosed by the previously applied references of Iwasaki '403 and the newly applied reference of Deschuytere '042.

As stated in the previous Office Action, the Iwasaki '403 reference discloses a RAM that holds the print buffers 618[1]. The RAM is considered as the overall print buffer with certain portions of the memory device designated for different colors. With this interpretation, the Examiner still believes that the first regions are comprised of a first region that corresponds with the scan direction of the print head. Within the Iwasaki '403 reference, the print buffers store rasters at identical print positions in the main scanning direction as 1-byte data[2]. As seen in figures 4, 7 and 13, the image data is printed in the main scanning direction. Moreover, the image data stored in the memory within the RAM at identical print positions is believed to perform the feature of having memory regions corresponding to the scan direction of the print head. Additionally, the rasters within the buffers are also divided by color components within the RAM device[3]. With the above mentioned information, the Examiner still believes that the claim limitations are performed.

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[1] See Iwasaki '403 at col. 9, ll. 52-67.

Regarding the asserted deficiency of the Clark reference, the Examiner still disagrees with the Applicant's allegation. Although the invention in the Applicant's specification may be different from the Clark reference, the Examiner still believes that the claim language directed towards the data delimiter feature is disclosed by the disclosure of Clark. In column 7, ll. 1 and 2, the passage specifically states that "*segment 711 contains zeros for the empty interval 714*". The Examiner considers the zeros as code data that are arranged in between the color elements. The color element (712) is considered as a first color component and the color element (713) is considered as a second color component separated from the first through segment (714). In addition, the DMA interrupts are also considered as coded data that provides the direct memory accessing procedure to occur in between the different color elements used in the printing process[4]. Both above examples are considered as codes that are between the color components.

Therefore, in view of the above arguments, the Examiner maintains the rejection with the previously applied references.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

[2] Id. at col. 7, ll. 56-col. 8, ll. 47.
[3] Id.
[4] See Clark '856 at col. 6, ll. 20-col. 7, ll. 58.

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289 (USP 5689289) in view of Iwasaki '403 (USP 6328403), Clark '856 (USP 7265856) and Deschuytere '042 (USP 5758042).

Re claim 1: Watanabe '289 discloses a printing apparatus that prints by scanning a print head with regard to a printing medium (i.e. the system discloses the printing head recording information onto a medium in a scanning direction; see col. 3, ll. 9-14),

a print buffer for dividing storage area into a plurality of first regions in corresponding with scan direction of the print head (i.e. the print buffer is used to store column data that has been recently converted to vertical data and this information is then printed as it is stored in the print buffer. The print buffer is stored in RAM (312) of the recorder (311). Here, the print buffer stores the vertical information of a plurality of column amounts for printing and another column amount stored for the next scan. The data storage capacity of the printer buffers correspond to the area to be recorded by a single main scan of the recording head. With the printer buffers being stored in RAM (312) and the RAM, considered as the printer buffer, being divided into two buffers, the Examiner believes that the storage area of the RAM is divided into a plurality of first regions; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8 and col. 11, ll. 1-46),

input means for sequentially inputting block data corresponding to the first regions (i.e. the system contains a 4-line buffer, considered as an input means, that can store four lines of converted image data that has been decoded by a programmed process of the CPU (111). The decoded data represents data that is dot image data,

considered as a raster, and this data is stored in the 4-line buffer. There are one-line representations that are decoded into a dot image, or a raster, stored in the 4-line buffer and the 4-line buffer is able to store 4 lines, two after resolution conversion and two lines before resolution conversion. The 4-line buffer is able to then contain a plurality of rasters when storing these lines. While the receiver buffer (202) receives data of one line from the 4-line buffer, the receiver buffer receives data sequentially from the 4-line buffer if the receiver buffer is empty. Therefore, the sequential transfer of data from the 4-line buffer to the receiver buffer is performed. Also, since the image data of one line of an overall image is stored in the 4-line buffer, the divided regions of an overall image are used to be transferred to the receiver buffer. Lastly, with the data being expanded into dot image data and then, the dot image data being encoded again while being stored in the image buffer (104), this performs the feature of having dot image data, or a plurality of raster data, being encoded, or compressed; see col. 3, ln 47 – col. 5, ln 64),

wherein the block data contains a plurality of color component data (i.e. in the system, the data of the lines can be either black or white; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

acquisition means for acquiring N-bit raster data from the block data by decompressing the compressed raster data (i.e. the raster buffer, considered as the acquisition means, receives, or acquires, lines of memory with a certain bit value (8x3640 bits) from the centronics sender. Specifically mentioned in column 4, lines 6-65, the raster buffer is used to decode, or decompress, data stored on the receiver

buffer (202). Also, the programmed processing of the CPU1 (111) decodes data that is stored in the image buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

conversion means for converting the raster data into column data (i.e. the horizontal-to-vertical conversion circuit performs the feature of converting the raster information into vertical, or column data; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

transfer means for sequentially transferring the raster data acquired by said acquisition means to said conversion means (i.e. once the system realizes that the raster buffer has 8 line of memory stored in the buffer, this information is sent sequentially to the horizontal-to-vertical conversion circuit. Therefore, the feature of transferring the raster data to a converter to perform column conversion is performed; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

second transfer means for sequentially transferring N column data converted by said conversion means to the print buffer (i.e. in the system, the information in the memory that was converted into vertical information is then transferred to the print buffer once 8 lines is recognized to be stored and converted in the horizontal-to-vertical converter. This performs the feature transferring the converted data to the print buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

storage means for storing the N column data transferred from said second transfer means in each second region of the print buffer (i.e. the print buffer stores the vertical, or column data, transferred from the horizontal-to-vertical converter. The print

buffer has 8 lines that represent 8 separate lines or regions of the print data that is stored in the print buffer. If print data is being output from the from print buffer 1 (205), the system then transfers column data information to be printed to the memory spaces within print buffer 2 (206); see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8); and

control means for executing transfer processing of said transfer means, transfer processing of said second transfer means, and conversion processing of said conversion means in synchronism with a predetermined signal (i.e. the CPUs (111 and 215) control the execution transferring the image data from the facsimile to the printer, transferring the image data to the raster buffer and transferring the information in the raster buffer to the horizontal-to-vertical conversion circuit. The transfers of the image data is based on the signal that represents when a buffer reaches the 8 lines of memory in the respective buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the reference of Watanabe '289 fails to teach a print buffer for dividing storage area into a plurality of first regions in corresponding with scan direction of the print head, each first region being divided into a plurality of second regions in correspondence with color components, and wherein color component data is stored in second regions respectively, for determining the code and storing means for storing N column data transferred on the basis of the code determined by said acquisition means.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses a print buffer for dividing storage area into a plurality of first regions in corresponding with scan direction of the print head (i.e. the invention discloses buffer

areas within the RAM that store information particular to each color represented in an image. Figures 4, 7 and 13 show rasters stored within the buffers pertaining to the particular colors and these rasters are at identical print positions in the main scanning direction as 1-byte data. When viewing figures 7 and 13, the image data is printed at a position on the paper that mirrors the raster position stored within the print buffers; see col. 7, 56-col. 8, ll. 16), each first region being divided into a plurality of second regions in correspondence with color components (i.e. like the Watanabe '289 reference, the Iwasaki '403 reference discloses a printing device receiving image information to process and print (same field of endeavor). However, shown in figures 7, 11 and 13, the RAM stores buffers associated with a particular color. The color data that is separated corresponds with the number of color components used in the image data. Although the system discloses separate buffers, the RAM in the system is interpreted as a print buffer that contains separated memory sections that accommodates the separate color components. The RAM is divided into a plurality of other regions that correspond with the color, such as Cyan and Yellow. With the combination of Iwasaki '403, the Watanabe reference will be able to store information in a manner mirroring the print position on a sheet of paper and having several color sections designated within the stored information; see col. 7, line 13 – col. 11, line 56), and

wherein color component data is stored in second regions respectively (i.e. the color components are stored within the buffers that are all within the RAM in the printer device by the color of the rasters; see col. 7, line 13 – col. 11, line 56);

for determining the code (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56) and

storing means for storing data transferred on the basis of the code determined by said acquisition means (i.e. the system of Iwasaki discloses storing data in a storage means based on the code analyzed and determined to be a specific type of information; see col. 7, line 13 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of a print buffer for dividing storage area into a plurality of first regions in corresponding with scan direction of the print head, each first region being divided into a plurality of second regions in correspondence with color components, and wherein color component data is stored in second regions respectively, for determining the code and storing means for storing data transferred on the basis of the code determined by said acquisition means, incorporated in the device of Watanabe '289, in order to store color information within a print buffer in RAM and having the storage position be identical to the print positions of the image data in the main scanning direction (as stated in Iwasaki '961 col. 8, lines 1-9).

However, Watanabe '289 in view of Iwasaki '403 and Casey '499 fails to teach the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data.

However, this is well known in the art as evidenced by Clark '856. Clark '856 discloses the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data (i.e. Like the previously applied references, Clark '856 discloses the feature of having a printing device receive and process information for output (same field of endeavor). However, Clark '856 discloses using the printer firmware using the firegroup count and the offset data contained in the print header to be used to calculate the beginning and the ending of each application of color on a page. The use of these two factors serves as a data delimiter. Specifically, in figure 7, element (714) can serve as a data delimiter between two color segments. Also, DMA interrupts are used as data delimiters since these interrupts serve as a signal to the system that another color is being introduced to the memory for output; see col. 5, lines 31-61, col. 6, ll. 57-67 and col. 8, ll. 1-58).

Therefore, in view of Clark '856, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of the apparatus, wherein the block data contains a code representing a data delimiter between first color component data and second color component data, incorporated in the device of Watanabe '289, as modified by the features of Iwasaki '403, in order to calculate the beginning and the ending points for application of a color (as stated in Clark '856 col. 5, lines 31-61).

Lastly, the above combination of references fails to specifically disclose the feature of wherein the color component data has a plurality of compressed raster data.

However, Deschuytere '042 fails to specifically teach wherein the color component data has a plurality of compressed raster data (i.e. like the previous references cited above, Deschuytere '042 discloses receiving data for printing through bitmapping the information and outputting the data through a printing device (same field of endeavor). However, the reference discloses a system receiving bitmaps or raster images for each color component represented in an image and compressing this information before the compressed information is further processed for output. This reference provides the combination with the advantage of having color data compressed, which provides a lower memory size of data to be processed and does not deteriorate the quality of the reproduced image when output; see col. 2, ll. 21-53 and col. 9, ll. 43-col. 10, ll. 5).

Therefore, in view of Deschuytere '042, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of wherein the color component data has a plurality of compressed raster data, incorporated in the device of Watanabe '289, as modified by the features of Iwasaki '403 and Clark '856, in order to lower the memory size of color image data that is being processed while not deteriorating the overall image quality (as stated in Deschuytere '042 at col. 2, ll. 47-53).

Re claim 4: The teachings of Watanabe '289 in view of Iwasaki '403, Clark '856 and Deschuytere '042 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 1, wherein said acquisition means outputs a second predetermined signal to said conversion means (i.e. in the

system of Watanabe '289, when the CPU of the printer outputs a code to the respective buffer containing a certain amount of lines to be printed, this signal representing the memory information is output to the horizontal-to-vertical conversion means once the image information is determined to not contain all-white information and is 8 lines; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the reference of Watanabe '289 fails to teach when the code is determined.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses when the code is determined (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of when the code is determined in order to have print data analyzed and developed based on the analyzed print data (as stated in Iwasaki '403 col. 5, lines 1-11).

Re claim 5: The teachings of Watanabe '289 in view of Iwasaki '403, Clark '856 and Deschuytere '042 are disclosed above.

Watanabe '289 the apparatus according to claim 1, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means

(i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and performs longitudinal/lateral conversion processing after said holding means holds the N raster data (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289, as modified by Iwasaki '403, Clark '856 and Deschuytere '042, and further in view of Iwasaki '961 (US Pub No 2002/0175961).

Re claim 6: The teachings of Watanabe '289 in view of Iwasaki '403, Clark '856 and Deschuytere '042 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 4, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and when the second predetermined signal is input while said holding means holds M (M<N) raster data (i.e. in the system, when one line that is all white is interpreted, a signal is input into the system describing that fact. This signal occurs when the raster means is holding the a certain amount of

raster information that is not greater than a certain number; (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), sets data in said holding means (i.e. in the case when the all white data signal is input into the system, the next image data is set in the raster buffer corresponding to the area of the next line; (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8) and then performs longitudinal/lateral conversion processing (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device that was sent from the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, Watanabe '289 in view of Iwasaki '403, Clark '856 and Deschuytere '042 fails to teach sets (N-M) "0" data in said holding means.

However, this is well known in the art as evidenced by Iwasaki '961. Iwasaki '961 discloses sets (N-M) "0" data in said holding means (i.e. Iwasaki '961 discloses setting data of one random number area to be 1 while setting others to be the number of zero. This is expressed in figures 7a and 7b. The mask in the RAM (604) memory is set to one, while other masks are set to zero; see figs. 7-10; paragraphs [0076]-[0086]).

Therefore, in view of Iwasaki '961, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of sets (N-M) "0" data in said holding means, as modified by the features of Iwasaki '403, Clark '856 and Deschuytere '042, in order to permit or prohibit printing of a dot in a certain area of an image (as stated in Iwasaki '961 paragraph [0078]).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Nohata '656 (USP 6111656) discloses an image communication apparatus that is able to acquire image data information and transfers the information within the equipment through several buffers and units for conversion before printing the image data.

7. Yamada (USP 6339480) discloses a printer driver for a color printer and the system comprises a raster to column conversion, a compression and a decompression of the raster data.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAD DICKERSON whose telephone number is (571)270-1351. The examiner can normally be reached on 9:30-6:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHAD DICKERSON
Examiner
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/Twyler L. Haskins/
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